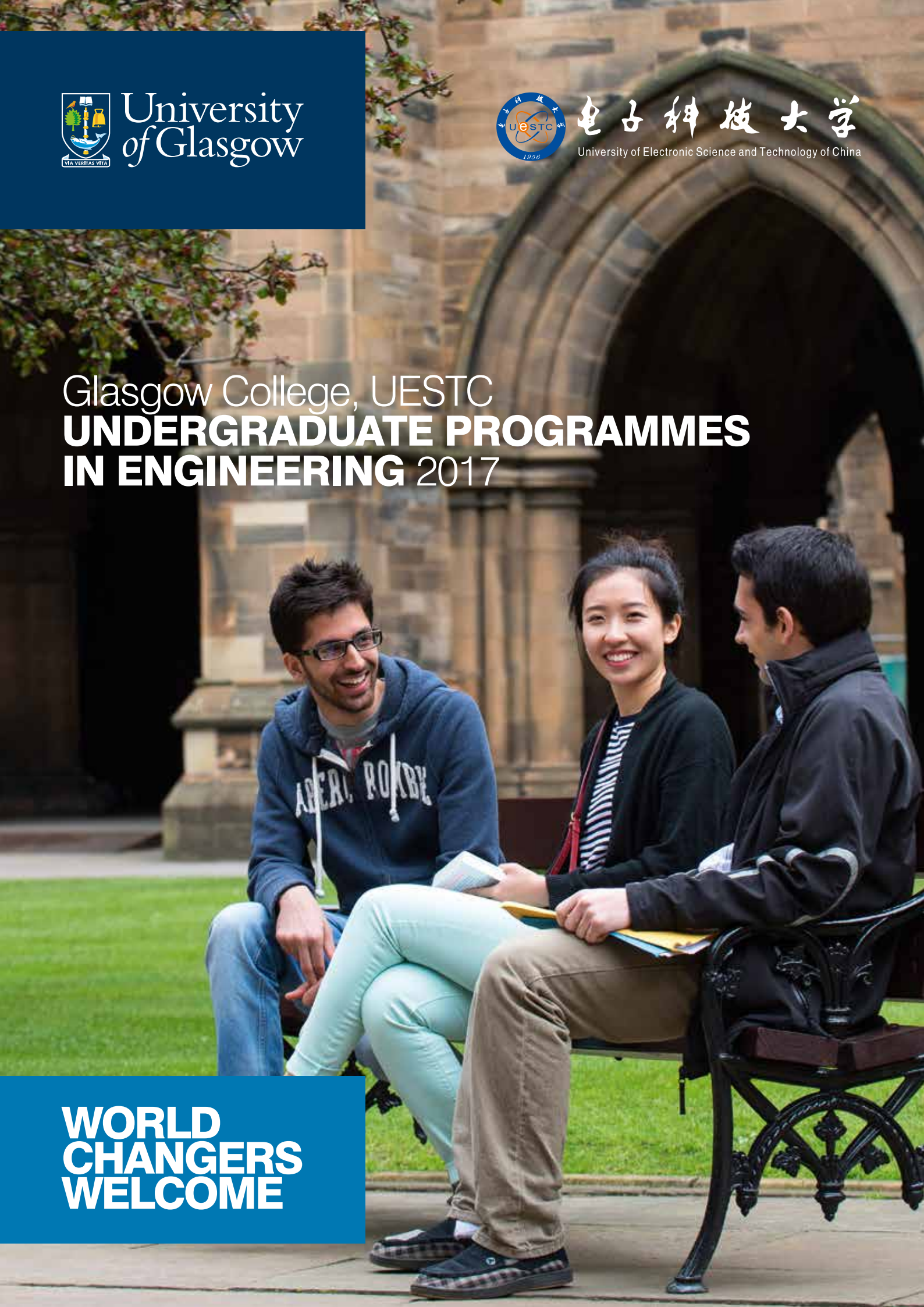
University of Glasgow

电子科技大学

University of Electronic Science and Technology of China

Glasgow College, UESTC
UNDERGRADUATE PROGRAMMES IN ENGINEERING 2017



WORLD CHANGERS WELCOME

THE UNIVERSITY OF GLASGOW

The University of Glasgow is ranked joint 63rd in the world and was the first UK university to be rated as 5 Stars Plus overall (QS World University Rankings). It is one of the UK's oldest institutions of learning, recognised internationally for its ground-breaking research that benefits industry, society and the environment. Founded in 1451, the University of Glasgow is a member of the prestigious Russell Group of leading UK research universities.

Glasgow scores consistently well in league tables for Electronics and Electrical Engineering; we are proud to be ranked 4th in the UK by the Independent Complete University Guide 2017.

Excellence in teaching

A research-led approach is one of the reasons why a degree from the University of Glasgow is so prized and students also benefit from a commitment to providing an intellectually stimulating learning environment.

Students at the University of Glasgow learn from dedicated teaching staff, recognised as leaders in their fields: in Engineering, our 'internationally excellent' and 'world-leading' research places Glasgow in the top five in the UK (REF 2014).

Students are guided in developing the ability to direct their own learning, ensuring they graduate equipped with the skills they need to compete in a global workplace.

An international community

Glasgow's outstanding reputation for research, vast experience and investment in facilities all contribute to make the University an attractive choice for the best students from across the globe.

Glasgow welcomes students from more than 140 countries and University staff collaborate with some 200 institutions around the world.

An impressive 94.9% of students are in employment or further study six month after graduation. And we know that the friendships and networks our students make at Glasgow can last a lifetime - we are in touch with 118,000 alumni in 180 countries.

HISTORY

1451
The University of Glasgow is established, making it the fourth oldest university in the English speaking world.

1737
Adam Smith, the father of modern economics and author of 'The Wealth of Nations' enters the University at the age of 14.

1840
Glasgow becomes the first university in the UK to appoint a Professor of Engineering, introducing the first degree programme in Engineering in the UK in 1872.

1881
Eminent Glasgow Professor, William Thomson, later Lord Kelvin, creates one of the first houses in the world to be fully lit by electricity on the University campus.

The University of Glasgow has fostered the talents of seven Nobel laureates and famous alumni include Adam Smith, Lord Kelvin, John Logie Baird, and outstanding engineers James Watt and William Rankine.

1914
John Logie Baird, the pioneer of television, begins his studies at the University.

1957
The University becomes the first in Scotland to have an electronic computer.

2013
The University opens its first programme in Chengdu, China in partnership with the University of Electronic Science and Technology of China (UESTC).

2017
After acquiring a 14-acre site adjacent to the current main building, a world-changing campus masterplan of development is approved.

THE UNIVERSITY OF ELECTRONIC SCIENCE AND TECHNOLOGY OF CHINA (UESTC)

Renowned as the birthplace of China's national electronic industry, UESTC is situated in the beautiful city of Chengdu, which is the capital of Sichuan Province and popularly referred to as 'The Land of Abundance'.

This fast growing metropolis also holds the strategic position of being the regional economic, cultural and transportation hub of Southwest China. UESTC was founded in 1956, under the direction of Premier Zhou Enlai, through the combination of the electronic engineering divisions of three well known universities: Shanghai Jiaotong University, Nanjing Institute of Technology and South China Institute of Technology. In 1960, UESTC was recognized as one of the key universities and served as one of the first seven universities in national defence research. Since the late 1990s, UESTC has been under the direct governance of the Chinese Ministry of Education through the nation's 'Project 985' – a national initiative that aims to develop an elite group of world-class research-oriented universities in China – and 'Project 211', which aims to create 100 first-class universities in key areas of research.

During the course of sixty years of growth and innovation, UESTC has evolved from a university specialising in electronic information engineering to a key multidisciplinary university focused on research-based science, technology and engineering education along with other key disciplines. At present, UESTC has 24 schools and 56 undergraduate programmes – including management and liberal arts concentrations; 14 of these programmes are designed to be national-level academic concentrations. Currently, UESTC has over 33,000 undergraduate students as well as 12,000 graduate students from China and around the world. More than 95% of UESTC's graduates find employment due to the superior quality of their university education and the excellence of the students' academic and extracurricular performance. 50% of UESTC's graduates go on to pursue further studies in China and around the world.

For more information, please visit UESTC's official website: **www.uestc.edu.cn**

HISTORY

1956
Chengdu Institute of Radio Engineering (CIRE), the first electronic information institute of higher education in China, was founded.

1960
Chengdu Institute of Radio Engineering was declared one of China's National Key Institutes by the Higher Education Ministry of State.

1988
Chengdu Institute of Radio Engineering was renamed University of Electronic Science and Technology of China.

In September 2001, UESTC was selected as one of the 39 elite research-intensive universities in China to gain special funding under Project 985.

1997
The University was included into 'the State's Education Revival Project' for the top one hundred key universities (Project 211).

2000
The University was transferred to the MOE-university system, hence a national key university directly affiliated into the State's Ministry of Education.

2001
The University was admitted to the State's 'Project 985' for the top 39 universities in China.

2007
Qingshuihe Campus occupying an area of 219 hectares, or 540 acres was opened.

ELECTRONICS AND ELECTRICAL ENGINEERING SCHOOL OF ENGINEERING, UNIVERSITY OF GLASGOW

As the oldest and one of the most prestigious Schools of Engineering in the UK, we have been delivering a world-class engineering education for more than 160 years. The education we provide is informed and supported by our portfolio of fundamental and industry-relevant research at the cutting edge of technology.

Electronics and Electrical Engineering at Glasgow has a truly international reputation. Over the past 30 years we have built a formidable track record in physical electronics, nanoscience and nanotechnology. The University is a recognised pioneer in the fields of nanoscience and nanotechnology and has developed outstanding experimental laboratory facilities, which include the James Watt Nanofabrication Centre, one of Europe's premier research clean rooms.

Electronics and Electrical Engineering graduates from the University of Glasgow are highly sought after by employers across the world. Graduates may choose from a broad range of employment options: for example, constructing nanoscale electronic circuits for future medical devices or hand-held computing equipment; planning wide area telecommunications networks using wireless, fibre optic and satellite links; or designing the electronics and electrical systems for energy harvesting or comfortable human transportation.

The Electronics and Electrical Engineering discipline at Glasgow has very strong links to UK, EU and international industry including companies such as: AMD; Philips; Siemens; BAE systems; Jaguar Land Rover and QinetiQ.

GLASGOW COLLEGE, UESTC

The University of Glasgow has a long tradition of welcoming students from China and building partnerships with prestigious Chinese universities, such as UESTC. The relationship between the University of Glasgow and UESTC dates back to 2009, when we first signed an agreement to promote joint research and student mobility. The collaboration then entered a new and exciting phase of development in 2013, with the joint delivery of a four year undergraduate dual-degree programme in Electronics and Electrical Engineering at UESTC's Qingshuihe Campus in Chengdu.
In January 2016, a Joint Educational Institute application was approved by the MoE and a second programme, Electronics and Electrical Engineering with Communications was launched in September 2016.

Glasgow College, UESTC offers programmes at a standard commensurate with the highest quality of education available internationally. With teaching delivered equally by staff from both universities, the joint programmes aim to combine the best features of the UK and Chinese university systems to provide students with the scholarship and skills that will equip them for lifetime careers as leaders in industry and academia. Students will be awarded with degrees from both Universities on meeting graduation requirements.

According to statistics updated in March 2017, 60% of students due to graduate from Glasgow College, UESTC will undertake further study abroad, and 15% of students will pursue a master's degree in Mainland China.

Currently, our first graduates have received offers from world famous universities, including Imperial College London, Columbia University, Duke University, University of Pennsylvania, University of California at San Diego, Northwestern University, Melbourne University and University of Glasgow.

Graduates from Glasgow College, UESTC are highly sought after by employers in China. Those in employment have found jobs in UAWEI, Midea, Southwest Air Traffic Control Bureau and other institutions.

'We have many opportunities to improve our skills to fit the demands of the world's market.'
Li Guannan, Year 3

STUDY IN GLASGOW

Studying at the Glasgow College, UESTC allows you the opportunity to graduate from two world-class universities without leaving China. For students who would like to gain experience of studying abroad, there are also two options available to undertake study on the UofG home campus in Glasgow, Scotland.

- **2+2 programme**

The 2+2 programme allows eligible students to complete Years 3 and 4 of their degree at UofG. Students will apply during the second year of their programme and offers of study will be confirmed following the publication of the Year 2 exam results.

- **Summer School**

The Summer School allows an exciting opportunity for a short visit to experience academic and social life at the University of Glasgow. The School, held during July and August, allows a chance for students to study a topic or research project, allowing visits to relevant industrial and cultural locations in Glasgow and its surrounding areas. The Summer School is an ideal way for students to sample life as an international student before committing to the 2+2 programme or postgraduate study.

LOVE GLASGOW, LOVE SCOTLAND

With cultural attractions, gorgeous architecture, fantastic shopping, friendly people and a year-round programme of world-class events, it's easy to fall in love with Glasgow and Scotland.

Glasgow is Scotland's largest city, home to people of many nationalities. Despite its size, it's easy to travel around, whether you choose to walk, take the bus, or use the subway. The University's main campus is nestled within Glasgow's cosy West End, which buzzes with cafes, bars, vintage boutiques and cultural attractions.

Glasgow is consistently voted the top place to shop in the UK outside London, and as the UK's first UNESCO City of Music, the city hosts around 130 music events every week. With more than 90 parks and public gardens, Glasgow also has more green space per head of population than any other European city. The city's nightlife is fantastic too, with more than 700 bars, pubs and nightclubs, plus seven cinemas, including the tallest in Europe.

Scotland has lots to offer you - beautiful scenery, ancient castles and amazing cultural attractions. The University's location in the Central Belt makes it easy for you to explore our beautiful country – Glasgow is a gateway to the Scottish Highlands, with Loch Lomond less than an hour's drive away.

There are footpaths, bike trails, hill climbs and mountain adventures to suit all levels of explorer. We're surrounded by beaches, offering opportunities for water sport activities, relaxing strolls and marine life spotting. Our iconic Munros (mountains over 3,000 feet) have spectacular views, while Scotland's many coastal islands each have their own unique character, landscape and wildlife, so get out there among our scenic and remote habitats!

Don't forget to explore Scotland's cities too. Check out the world's largest arts festival in Edinburgh, uncover Stirling's historic buildings and castle, or go hunting for the Loch Ness monster near Inverness.

More information: **visitscotland.com**

Luskentyre beach on the Isle of Harris

George Square in the heart of Glasgow city centre


Ashton Lane is a lively cobbled lane on the doorstep of the campus, packed with bars, restaurants and a cinema


The Kelpies, Helix Park, near Falkirk


Ben A'an, the Scottish Trossachs

OUR PROGRAMMES

- **BEng (HONOURS) ELECTRONICS AND ELECTRICAL ENGINEERING**
- **BEng (HONOURS) ELECTRONICS AND ELECTRICAL ENGINEERING WITH COMMUNICATIONS**

glasgow.ac.uk/undergraduate/degrees/electronicsuestc

Electronics and Electrical Engineering touches all aspects of contemporary life, having spawned the electric power generation and transmission systems, the computer revolution, global telecommunications, the fields of robotics and automation, and the modern entertainment industries. It is also key to the design of systems to improve health care, to the creation of energy efficient systems that reduce our need for fossil fuel-based energy sources, and to regulate renewable power sources such as wind, wave and solar.

Electronic and Electrical Engineers design optimal systems that sense, transmit and process information; generate, control and distribute power and energy, or even control the operation of safety critical features in a wide diversity of real life applications such as air traffic control, navigation and manufacturing.

Our degree programmes equip graduates for a wide range of opportunities in industry, by concentrating on the following aims:

- to develop in students a comprehensive understanding of the fundamental principles on which electronic and electrical devices, circuits and systems are based (including a thorough grounding in relevant mathematics in the early years of the degree)
- to build experience in the analysis and solution of practical engineering problems, and the design and testing of novel electronic and electrical devices, circuits and systems
- to provide experience of engineering practice including the use of standard tools and software
- to provide opportunities for the student to study specialist topics, chosen by students in their Honours year such as high frequency integrated circuits, telecommunication systems and transceivers, optimal coding algorithms, digital signal processing components, optoelectronic devices, and multi-antenna systems
- to inculcate the skills and creativity required to perform both team and individual projects successfully
- to build some appreciation of the non-technical aspects of the environment in which engineers are employed, ranging from communication skills to economic, management and ethical issues.

The majority of these aims will be accomplished through lecture courses and associated laboratories, supported by a strand of creative project work that develops throughout the degree.

Distinctive features of the degree include: a 3rd year project where small teams of students design and test a complex autonomous electronic system from scratch, working to an engineering design brief; and an individual project in 4th year which may be in industry where students rise to the challenge of working in an unfamiliar environment on a substantial and novel engineering problem.

Student Xiaofei Pu excelled in the 2014 Institution of Engineering and Technology's (IET) Present Around the World Competition, representing China in the Asia-wide round of the global contest.

An outline of the courses that you will study in each year of the programme is given below. In addition to these courses, all students enrolled in the joint programmes will study the various non-technical and training courses that are required by UESTC.

BEng (HONOURS) ELECTRONICS AND ELECTRICAL ENGINEERING

In Year 1 you will study:

Calculus I
Introductory Programming
English for Engineering I
Microelectronic Systems
Calculus II
Physics I
Physical Experiments I
Linear Algebra and Space Analytic Geometry I
English for Engineering II

In Year 2 you will study:

Circuit Analysis and Design
Physics II
Physical Experiments II
Probability Theory and Mathematical Statistics
English for Engineering III
Embedded Processors
Engineering Career Skills
Numerical Analysis
Fundamentals of Analog Circuits
Application and Design of Digital Logic

In Year 3 you will study:

Power Engineering
Electromagnetic Field and Microwave Technology
Team Design Project
Electronic System Design
Project Management
Signals and Systems
Engineering Economics and Ethics
Electronic Devices
Power Electronics
Dynamics and Controls
Research Methods
Digital Signal Processing

In Year 4 you will study:

Real Time Computing Systems and Architecture
Digital Communication
VLSI
Design
Control
Individual Project

BEng (HONOURS) ELECTRONICS AND ELECTRICAL ENGINEERING WITH COMMUNICATIONS

In Year 1 you will study:

Calculus I
Introductory Programming and Skills
English for Engineering I
Calculus II
Physics I
Physical Experiments I
Microelectronic Systems
English for Engineering II
Linear Algebra and Space Analytic Geometry I

In Year 2 you will study:

Circuit Analysis and Design
Physics II
Physical Experiments II
Probability Theory and Mathematical Statistics
English for Engineering III
Signals and Systems
Engineering Career Skills
Embedded Processors
Numerical Analysis
Communication Networks

In Year 3 you will study:

Electromagnetic Field and Microwave Technology
Communication Principles and Systems
Stochastic Signal Analysis
Elements of Information Theory
Project Management
Team Design Project
Microwave and mm Wave Circuit Design
Digital Signal Processing
Comprehensive Experiments in Network Technology
Engineering Economics and Ethics
Research Methods
Digital Circuit Design

In Year 4 you will study:

Individual Project
Network Communication Systems
Microwaves & Optical Transmission Systems
Mobile Communications
Cyber Security

*Please note: The curriculum outlined may be subject to change as deemed necessary.

Accreditation

All current University of Glasgow single and joint honours degrees with Electronics are accredited by The Institution of Engineering and Technology (which was previously known as the Institution of Electrical Engineers). For the Glasgow College, UESTC joint programmes, it is our intention to seek accreditation at the first allowable opportunity.

'Through this programme I can acquire double degrees and receive international education. Both of these can help me a lot in the future.'
Li Yue, Year 3

HOW TO APPLY

For more information on how to apply please contact the Admissions Office at **Glasgow College, UESTC:**
Qingshuihe Campus: No.2006, Xiyuan Ave., West Hi-Tech Zone Chengdu, Sichuan 611731
P. R. China
Tel: +86-28-61831797, 61831772 WeChat: WeGlasgow

International students are also welcome to apply for this programme and can find further information at:
en.uestc.edu.cn
www.gla.uestc.edu.cn/english

For general enquiries about studying at the University of Glasgow as a student from China, please contact: **student.recruitment@glasgow.ac.uk**

The University of Glasgow welcomes students from more than 140 countries.

The beautiful scenery of the city of Chengdu, at Anshun Bridge

The subway entrance at the centre of Tianfu Square, Chengdu

The Fraser Building on the UofG campus has a range of student services including a GP, bookstore and food court.

Chengdu incorporates many styles of architecture.

INTERACT

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The University of Glasgow, charity number SC004401.
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